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Lumpy Skin Disease in Cows in Jodhpur District: A Survey

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ABSTRACT: Cows are our religious and prestigious animal from centuries. In the ancient history, many battles were fought for the protection of cows. In Rajasthan, just after a wave of COVID-19 pandemic in 2022, a new pandemic like situation in cattle especially in cows hits all the 33 districts. After heavy rainfall in this monsoon a new disease outbreaks in the form of Lumpy Skin Disease (LSD) spread mainly in cows. A random survey was carried out by Research and Development Cell of Govt. Girls College, Magra Punjala, Jodhpur (Rajasthan). For this purpose an open ended questionnaire was prepared and UG final year girls were trained for it. The survey was carried out in both rural and urban areas of Jodhpur district in the month of Oct-Nov. 2022. The cow bearers were categorised in three categories for the survey work – farmers; including people whose main income is from farming and cattle rearing side business having small population of cattle; commercial cattle rancher whose main income source is from dairy products and cowshed/ Goushala owners. Result shows that 56% cows were infected with this disease out of which 32.14% were dead due to late noticed by the owners/ improper treatment or having severe infection. Milch cows were mostly affected, as the result shows death of 48% milch cows were noticed out of the total deaths. Challenges of this study were to identify and work on a social problem that affected every person's life and to carry out the survey without any financial support. It was also difficult to convey the people that we are not from the official sites to compensate for the cows death´s from LSD.

Keywords: Lumpy Skin Disease, status of cows, infection, death rate.

INTRODUCTION

Cows are our religious and prestigious animal from centuries. In the ancient history, cause of many battles was to protect the cows which we can read in our holy books (Parashari and Khan 2020). In Rajasthan, just after a wave of COVID-19 pandemic in 2022, a new pandemic like situation in the form of lumpy skin disease (LSD) spread in cattle especially in cows, hits all the 33 districts. The first case of LSD was reported from Zambia in 1929 (Morris, 1931) and after that in southern and northern African countries. Later on, it spread to Israel, Kuwait, Oman and Yemen (Wainwright *et al*., 2013). According to OIE, at present this disease is wildly spread in African, European and Asian countries (Tuppurainen *et al*., 2015). In India, first outbreak of the LSD was reported in Odisha state in the month of August 2019; in monsoon season (https://www.oie.int/). In Rajasthan, this year monsoon was much more active and according to Indian Meteorological Department the state received 270 mm of rainfall in July (2022) month, which was a record in last seven decades. In the month of August 2022, the history repeats itself (www.downtoearth.org.in 29 Sept 2022). Lumpy Skin Disease (LSD) is caused by a virus, Capri Pox Virus (CaPV) belongs to family poxviridae. The symptoms are in the form of nodules of 2-5 cm all over the body, known as lumps, which gradually open up into large and deep wounds (www.amarujala.com 12 Sept 2022). The disease mainly spreads through blood sucking vectors like flies, ticks and mosquitoes (Tuppurainen *et al*., 2011; Lubinga *et al*., 2013). Close contact with an infected animal can spread the disease in a healthy one. A report by International Livestock Research Institute (ILRI) released on July 6, 2020 showed that change in rainfall and temperature may affect the distribution and abundance of the disease vectors. In Rajasthan, nearly 8 lakh cows got infected from lumpy skin disease and more than 59,000 cows have died due to infection (www.jagran.com, 7 Sept. 2022).

OBJECTIVES

- To know about the cows population infected by Lumpy skin disease.
- To know the deaths of infected cows.
- To know the death rate of different categories of infected cows.
- To know the reasons of death in cows.

METHODOLOGY

A questionnaire was prepared by Research and Development cell of Govt. Girls College, Magra Punjala, Jodhpur (Rajasthan) and students of UG final year were trained for open ended questions for the survey work. Random survey was carried out in the month of Oct.-Nov. 2022 both in rural and urban areas in Jodhpur district. The cow bearers were categorized in three different categories for the survey work – 1). Farmers including people whose main income is from

farming and cattle rearing is side business having small population of cattle, 2). Commercial cattle rancher, main income source is from dairy products and 3) cowshed/ Goushala owners.

OBSERVATIONS AND RESULT

The survey was carried out on 100 cows of different parts of Jodhpur district. Out of which 38 were milch cows, 46 pregnant, 16 calves. Out of 100 (total surveyed cows) 82 were Indian/ Rathi and rest 18 were foreign/ Jersey breeds (Fig. 1).

Fig. 2 shows that out of total surveyed cows (100) 56% got LSD infection, majority of infection was noticed in milch cows (65.79%), followed by calves (62.5%). Pregnant cows were lesser infected (45.65%) than other categories. Foreign breed was found more sensitive to LSD infection as 61.11% of the total cows got infection, more than Indian breed (54.88%).

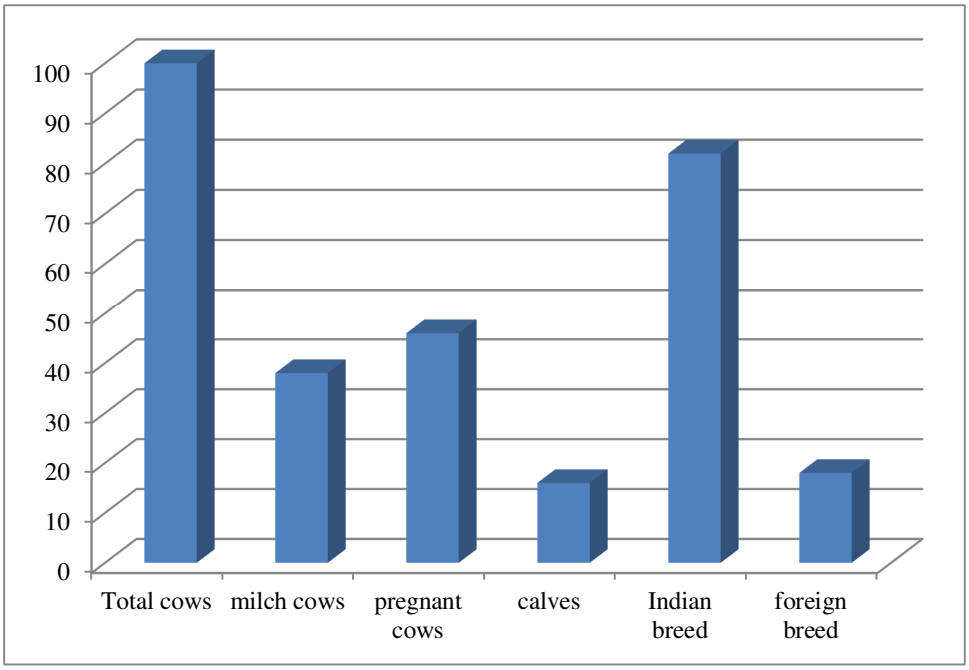

Fig. 1. Total cows surveyed of different categories (in numbers).

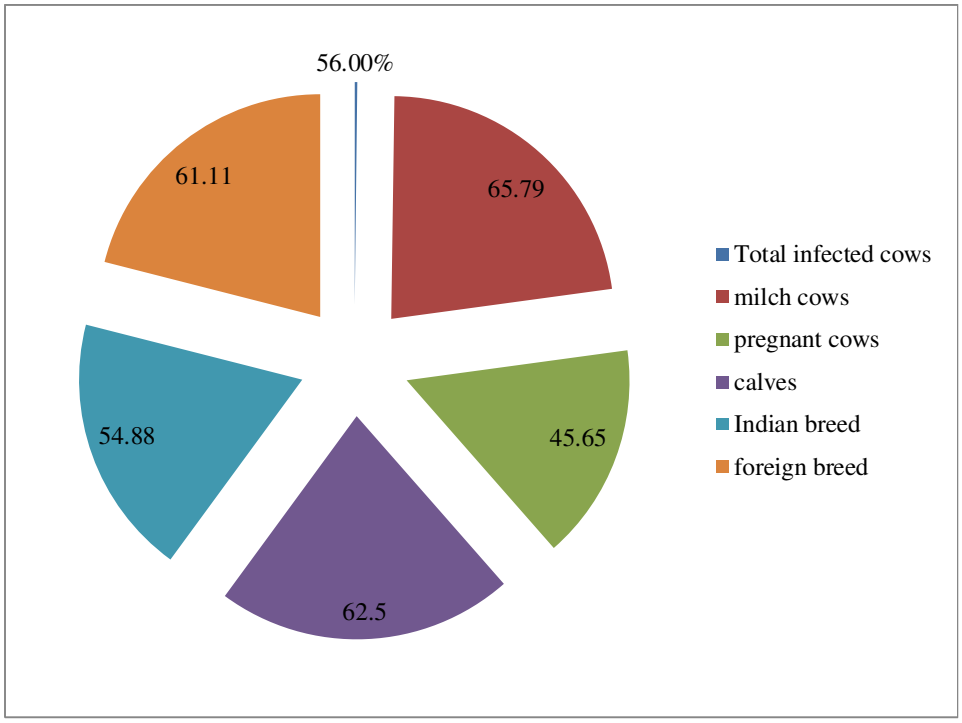

Fig. 2. Total cows infected of different categories (in %).

Plate-1. A cow severally infected with LSD (Photo credited by Laxmi Choudhary).

Plate-2. A chunari is wrapped to prevent the cow from flies and mosquitoes (Photo credited by Laxmi Choudhary).

The cows under one shed were more infected. Plate-1 shows the severally infected Indian breed with open lumps. While Plate-2 shows the precaution of a foreign breed from the LSD vectors.

Fig. 3 shows that 32.14% died out of total LSD infected cows (56%). Here also the death rate of milch cows was found nearly half (48%) of other total categories. Death rate of foreign breed was found more (36.36%) than Indian breed (31.11%).

The symptoms of LSD in cows were noted in the form of high fever, lumps on the whole body, stop eating, falling saliva from nose and mouth, problem in breathing. Infection was found more severe in the cows reared in group or infection noticed in later stage or not taken seriously in the early stage by owners. The more deaths were noticed in the cows having Gastro Intestinal Trouble (GIT) or respiratory problem.

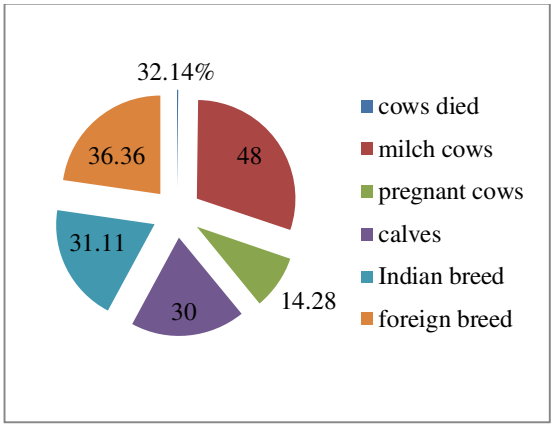

Fig. 3. Total cows died due to LSD infection of different categories (in %).

CONCLUSION

Cows are our religious animal. A new pandemic like situation was found in all the 33 districts in Rajasthan, just after heavy rainfall in this monsoon season. Mulatu and Feyisa, 2018 also found that the disease incidences significantly increase with the onset of rainy and summer season, with the peak activity of the vectors in sub Saharan Africa, Egypt and Ethiopia. Death of cows on a large scale affects everyone's spirit. The survey result shows that 56% cows were infected with this disease out of which 32.14% was dead due to late noticed by the owners/improper treatment or from severe infection. Milch cows were mostly affected, as the result shows death of 48% milch cows out of the total deaths, maybe due to poor immunity. Foreign breed was found to be more sensitive to LSD (36.36%) than Indian breed (31.11%). Animals of all ages are prone to LSD but calves are more susceptible (Al-Salihi, 2014), result matches as 62.5% calves were found infected. Many studies show that direct contact of animals has no role in transmission of virus (Magori-Cohen *et al*. 2012). Virus is secreted in milk, nasal secretions, saliva, blood and lacrymal secretions forming indirect source of infection for animals, sharing the same feeding and watering troughs (Ali *et al*., 2012), but not noticed by farmers/owners as have not been reported. The more deaths were noticed in the cows having symptoms of Gastro Intestinal Trouble (GIT) or respiratory problem. LSD causes economic losses in the form of lesser productivity (www.hindustantimes.com, 19 Sept., 2022) and increase in price of cows.

FUTURE SCOPE

Due to Lumpy skin disease, deaths of cows in a large number have broken the backbone of dairy industry. A long term Socio-economic impact of this disease is to be further studied.

Conflict of Interest. The author declares that there was no conflict of interest.

Author Contributions. Identification of the problem and framing the survey study, help in data collection, performed the analysis and wrote the paper.

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